



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/758,229

01/16/2004

Cullen E. Bash

200208849-1

6130

22879

7590

10/18/2005

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

TRIEU, VAN THANH

ART UNIT

PAPER NUMBER

2636

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,229

Applicant(s)

BASH ET AL.

Examiner

Van T. Trieu

Art Unit

2636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/16/04 & 7/20/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "manipulating the vent tiles through control by the agents" is unclear to who are the agents (the operator, the central control apparatus or the smoke sensors to manipulate the vent tiles.

Claim 5 recites the limitation "the agents" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-13,17-25 and 27-42 are rejected under 35 U.S.C. 102(b) as being anticipated by **Munk et al** [US 4,085,253].

Art Unit: 2636

Regarding claim 1, the claimed method of controlling cooling fluid provisioning in a room housing a plurality of components (the ventilating and air conditioning system 10 providing cooling air or compressible fluid such as air into a plurality of rooms 25 in a building B, see Fig. 1, col. 1, lines 38-40); and the room including at least one plenum having one or more cooling system components configured to vary a characteristic of at least one of cooling fluid supply to and removal from the room (each of the room 25 includes a branch damper 28, 68 or 72, an actuator 30, 70 or 74, a return plenum 32, a smoke detector 50, a purge register 80 and a temperature sensor 154, see Figs. 1-4, col. 5, lines 25-68, col. 6, lines 1-18, col. 8, lines 36-46 and col. 14, lines 65-67); and the method comprising: positioning location aware sensors at various locations in the room (the desired position location of each smoke detectors 50 and temperature sensors 88 and 154 at various selected locations in the rooms 25, see Figs. 1-4, col. 14, lines 65-68, col. 15, lines 1-4 and col. 19, lines 63-66); and determining the locations of the aware sensors' s location (the decision element 152 for determining a specified location and detected temperature by that temperature sensor 154 for controlling the ventilation and AC system, see Fig. 6, col. 15, lines 1-25); and the detecting one or more conditions with the location aware sensors (the central control apparatus 86 electrically connected to a plurality of smoke sensors 50, outside temperature sensor 88 and room temperature sensors 154, for detecting of smoke and temperature in a selected room 25, see Figs. 1-6, col. 11, lines 3-49, col. 14, lines 44-67 and col. 15, lines 1-56); and determining whether to manipulate at least one of the one or more cooling system components to modify a characteristic of cooling fluid contained in the plenum based

Art Unit: 2636

upon the detected one or more conditions (the decision element 152 for determining a specified location and detected temperature by that temperature sensor 154 for controlling to operate the actuator 30, 70, return damper 28, purge register 80, purge dampers 82, and selected volume of cool air of the ventilation and AC system, see Figs. 1-6, col. 11, lines 3-68, col. 12 to col. 14 and col. 15, lines 1-25); and manipulating at least one of the one or more cooling system components in response to a determination to that the at least of the one or more cooling system components is to be modified (the decisions of the central control apparatus 86 controls to manipulate and adjusting to modify the amount of air and cooling fluid/air for each specified rooms 25, see Figs. 1-6, col. 11, lines 3-68, col. 12 to col. 14 and col. 15, lines 1-25).

Regarding claim 2, the claimed steps of determining the location of the aware sensor location comprises auto-configuration the location aware sensors, which reads upon the central control apparatus 86 is programmed for automatically monitoring and tracking location, temperature conditions and smoke conditions at each rooms 25 within a building B, wherein it can automatically provide exactly configuration location of each sensors 50, 88 and 154 in a specified/selected room 25, see Figs. 1-6, col. 11, lines 3-68, col. 12 to col. 14 and col. 15, lines 1-25).

Regarding claim 3, all the claimed subject matters are cited in respect to claim 1 above, see Figs. 1-5.

Art Unit: 2636

Regarding claim 4, the claimed vent tiles configured to deliver cooling fluid from the plenum into various locations in the room (the ventilation and AC system 10 includes an intake of the fan 12 in communication with the interior of the main supply plenum 14 and main air supply duct/passageway 18 to provides air ventilation to various location in the room 25 via the auxiliary air passageways 22 and 24, see Figs. 1-5, col. 5, lines 30-68 and col. 6, lines 1-57).

Regarding claim 5, the claimed manipulating the vent tiles through control by the agents (each set of operators for a single selected location 25 is controlled by the central control apparatus 86, see Figs. 1-6, col. 10, lines 59-68, col. 11, lines 1-68, col. 12 to col. 14 and col. 15, lines 1-25).

Regarding claim 6, the claimed the step of determining whether to manipulate at least one of the one or more cooling system components comprises determining whether the detected one or more conditions are within one or more predetermined ranges and wherein the step of manipulating at least one of the one or more cooling system components comprises manipulating the vent tiles to vary cooling fluid flow through the vent tiles in response to the detected one or more conditions falling outside of the one or more predetermined ranges (the decision elements 150, 152, 160, 164, 166 and 168, see Fig. 6, col. 14, lines 44-68, col. 15, lines 1-68 and col. 16, lines 1-26).

Art Unit: 2636

Regarding claim 7, all the claimed subject matters are cited in respect to claims 1 and 6 above, see Figs. 1-6, and including the return plenum 32, return purge dampers, 28 and 46, col. 15, lines 49-68 and col. 16, lines 1-26).

Regarding claim 8, all the claimed subject matters are cited in respect to claims 6 and 7 above.

Regarding claim 9, all the claimed subject matters are cited in respect to claim 1 above, and including the variable volume devices (the variable volume of cooling from main supply plenum 14 and see Fig. 1, col. 5, lines 30-68, col. 6, lines 1-3, col. 16, lines 60-65).

Regarding claim 10, all the claimed subject matters are cited in respect to claims 6 and 9 above.

Regarding claim 11, all the claimed subject matters are cited in respect to claim 6 above, and including the controllable partitions (the central control apparatus 86, see Figs. 1-6.

Regarding claim 12, all the claimed subject matters are cited in respect to claims 6 and 11 above.

Art Unit: 2636

Regarding claim 13, the claimed associating the location aware sensors with one or more agents (more than one set of operators associated with a plurality of sensors 50, 88 and 154 for each of the locations 25 within a building B being controlled by the central control apparatus 86, see Figs. 1-6, col. 10, lines 59-68, col. 11, lines 1-68, col. 12 to col. 14 and col. 15, lines 1-25).

Regarding claim 17, all the claimed subject matters are cited in respect to claims 1 and 13 above.

Regarding claim 18, all the claimed subject matters are cited in respect to claim 1 above, and including the IBM computer system, see col. 10, lines 54-59.

Regarding claim 19, all the claimed subject matters are cited in respect to claims 1 and 18 above.

Regarding claim 20, all the claimed subject matters are cited in respect to claim 19 above, and including the global cooling component (the sets of operators are controlled by the central control apparatus 86 through a computer and a multiplexing adaptor, see Fig. 4, col. 11, lines 3-11).

Regarding claim 21, the apparatus claimed limitations are met by the method claim 1 above.

Regarding claim 22, all the claimed subject matters are cited in respect to claims 4, 7, 9 and 21 above.

Regarding claim 23, all the claimed subject matters are cited in respect to claims 4, 5 and 21 above.

Regarding claim 24, the claimed agent is configured for relocation with the relocation of the at least one vent tile (the set of operator is controlled by the central control apparatus for relocating/changing of the venting passages according to the decision elements 150, 152, 160, 164, 166 and 168, see Figs. 1, 4 and 6, col. 14, lines 44-68, col. 15, lines 1-68 and col. 16, lines 1-26).

Regarding claim 25, all the claimed subject matters are cited in respect to claims 14, 18 and 21 above.

Regarding claim 27, all the claimed subject matters are cited in respect to claims 17 and 21 above.

Regarding claim 28, the claimed one or more conditions comprises at least one of temperature, humidity, pressure, air flow and vibration (the temperature sensors 88 and 154, the air flow volume and the smoke sensors 50, see Figs. 1 and 5).

Art Unit: 2636

Regarding claim 29, the apparatus claimed limitations are met by the method claim 1 above.

Regarding claim 30, all the claimed subject matters are cited in respect to claims 2 and 29 above.

Regarding claim 31, all the claimed subject matters are cited in respect to claims 22 and 29 above.

Regarding claim 32, all the claimed subject matters are cited in respect to claims 23 and 29 above.

Regarding claim 33, all the claimed subject matters are cited in respect to claims 24 and 32 above.

Regarding claim 34, all the claimed subject matters are cited in respect to claims 27 and 29 above.

Regarding claim 35, all the claimed subject matters are cited in respect to claims 25 and 34 above.

Art Unit: 2636

Regarding claim 36, the apparatus claimed limitations are met by the method claims 1 and 18 above.

Regarding claim 37, all the claimed subject matters are cited in respect to claims 30 and 36 above.

Regarding claim 38, all the claimed subject matters are cited in respect to claims 13 and 36 above, and including a set of instruction, see Fig. 7, col. 20, lines 17-54.

Regarding claim 39, all the claimed subject matters are cited in respect to claims 19 and 38 above.

Regarding claim 40, all the claimed subject matters are cited in respect to claims 36 and 38 above.

Regarding claim 41, all the claimed subject matters are cited in respect to claims 36 and 40 above.

Regarding claim 42, all the claimed subject matters are cited in respect to claims 20, 36 and 41 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Munk et al** [US 4,058,253].

Regarding claim 14, **Munk et al** fails to disclose one or more agents comprising rack or row agents and wherein the steps of determining whether to manipulate at least one of the one or more cooling system components is performed by the rack or row agents.

However, **Munk et al** teaches that a plurality sets of operators associated with a plurality of sensors 50, 88 and 154, a branch damper 28, 68 or 72, an actuator 30, 70 or 74, a return plenum 32, a smoke detector 50, a purge register 80 for each of the locations 25 within a building B being controlled by the central control apparatus 86

Art Unit: 2636

through a computer and a multiplexing adaptor, see Figs. 1-6, col. 10, lines 59-68, col. 11, lines 1-68, col. 12 to col. 14 and col. 15, lines 1-25. Therefore, it would have been obvious to one skill in the art to recognize that the plurality of sets of operators can be arranged into any rack or row arrangement that is not degrading the performance of ventilation and air conditioning system for each of the areas or rooms within a building since the rack and/or row arrangement do not bring to any criteria to the venting and air conditioning system.

Regarding claim 15, all the claimed subject matters are discussed in claims 13 and 14 above.

Regarding claim 16, all the claimed subject matters are discussed in claim 15 above, and including the global cooling system component (the sets of operators are controlled by the central control apparatus 86 through a computer and a multiplexing adaptor, see Fig. 4, col. 11, lines 3-11).

4. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Munk et al** [US 4,058,253] in view of **Garvey et al** [US 6,286,764].

Regarding claim 26, **Munk et al** fails to disclose the plurality of location aware sensors being configured to wirelessly communicate with each other and the controller.

However, **Munk et al** teaches that the smoke detectors 50, temperature sensors 88 and 154 are electrically connected to the central control apparatus 86 through a multiplexer

Art Unit: 2636

adaptor, see Figs. 3-5, col. 11, lines 3-21. **Garvey et al** suggests that a fluid or gas delivery system incorporate re-circulating, purging and/or recycling function to achieve various desired purposes such as setting temperature for drawing cold fluid from the cold fluid source for cooling multi-rooms at different temperature settings. The system is controlled by a microprocessor 34, which is communicating with a plurality of temperature sensors via wire or other infrared IR or radio frequency RF communication, see Figs. 1, 4-6, col. 16, lines 32-40, col. 17, lines 47-63, col. 18, lines 12-43.

Therefore, it would have been obvious to one skill in the art at the time the invention was made to substitute the IR or RF communication of **Garvey et al** for the wire/cable communication of **Munk et al** for eliminating wires/cables and providing easier of installation of the system at any housing, building or office.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

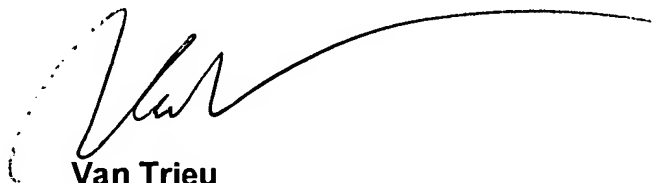
Bash et al discloses a system and method for cooling a room configured to house a plurality of computer systems mounted on a rack. [US 6,938,433] and [US 6,786,056]

West et al discloses an apparatus and method for controlling flow of a cold fluid and a hot fluid that environmentally controls a zone of a building. [US 6,296,193]

Art Unit: 2636

6. Any inquiry concerning this communication or earlier communications from examiner should be directed to primary examiner **Van Trieu** whose telephone number is (571) 272-2972. The examiner can normally be reached on Mon-Fri from 7:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. **Jeffery Hofsass** can be reached on (571) 272-2981.

A handwritten signature in black ink, appearing to read 'Van Trieu', with a long, sweeping horizontal line extending to the right.

Van Trieu
Primary Examiner
Date: 10/6/05